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ABSTRACT

Internalizing symptoms, which include anxiety and depression, may be the most common pattern of psychopathology found in children. However, the knowledge base targeting internalizing symptomology in Native American children of the Southwest is surprisingly limited. This paper reports on a study of prevalence rates of internalizing disorders among children on the Navajo Reservation. Using the Child Behavior Checklist, Youth Self-Report, and Teacher's Report Form, data were gathered from 351 Navajo children in the second and fourth grades, their teachers, and their parents or caretakers. Prevalence estimates for depression, anxiety, and somatization were higher in this group of children than in majority-population samples, and are a cause for concern among parents, teachers, and mental health agencies. Depending on the reporting source, clinically significant symptoms were found among 2.6-6.1 percent of children for depression, 2.9-5.4 percent for anxiety, and 2.6-4.2 percent for somatization. Data tables report findings by age, sex, and reporting source. Limitations of the findings are discussed along with recommendations for further research. Contains 15 references. (SV)

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Prevalence Rates of Depression, Anxiety, and Somatization among Rural Southwestern Native American Children

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Abstract

The prevalence and overall seriousness of emotional and behavioral disorders of children are becoming progressively greater (Bickman & Rog, 1995). An estimated 12% of all children have a diagnosable mental health disorder (approximately 7.5 million children), half of whom are estimated to have a serious mental health disorder (Saxe, Cross, & Silverman, 1987). Internalizing symptoms, which include anxiety and depression may be the most common pattern of psychopathology found in children (Achenbach, 1982; Achenbach & Edelbrock, 1983; Quay, 1986a).

The knowledge base targeting internalizing symptomology in Native American children of the southwest U.S. is surprisingly limited. As yet, it is not clear if the process, prevalence, and symptoms of internalizing disorders are the same across cultures. The need for further investigation is heightened by the fact that, compared to the majority population, Native Americans are believed to be at greater risk for psychological problems because of impoverished living conditions, high unemployment, and high numbers of traumatic events on Native American reservations. Additionally, loss of traditional culture and language may create risk for greater psychosocial problems. Additional research is needed to better understand internalizing symptoms among members of this cultural group.

To help meet this need, the present study focused on prevalence rates of internalizing disorders among Native American children from the southwest U.S., utilizing a portion of an extant data set from the Flower of Two Soils Project. This project was one of very few methodologically sound studies that have been successful in obtaining multisource, multimethod data on social, emotional, and behavioral functioning of Native American children. Data were collected using modified versions of the Child Behavior Checklist (CBCL), Youth Self-Report (YSR), and Teacher's Report Form (TRF).

This report provides some of the best available data to form a basis for normative distributions of internalizing symptomology among southwestern Native American children. Prevalence estimates for depression, anxiety, and somatization are higher than rates reported in majority samples, and are a cause for concern among parents, teachers, and all agencies responsible for Native American children's mental health. Results of the present study also provide preliminary information regarding differences in expression of internalizing symptoms across age, sex, and reporting source. Additionally, the cultural relevance of symptoms is discussed, with suggestions for mental health providers working with Native American children.

Introduction: Internalizing Disorders and Native American Children

- Internalizing problems may be the most common pattern of psychopathology found in children (Achenbach, 1982; Achenbach & Edelbrock, 1983; Quay, 1986a).
- There is sparse research on internalizing disorders among Native American children.
- Internalizing symptoms, sometimes called an "overcontrolled" form of psychopathology, encompass excessive emotional distress and responses directed against the self, resulting in anxiety, depression, social withdrawal, and self-deprecation (Achenbach, 1982; Achenbach & Edelbrock, 1983; Quay, 1986a; Quay & LaGreca, 1986).

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- Children with mental health problems are at high risk for later adult psychopathology when left unidentified or untreated (Quay, 1986a).
- Indian Health Services (IHS) suggests Native American adolescents living on Indian reservations display greater mental health problems in comparison to the general population (Nelson, 1989).
- Berlin (1986) found emotional and behavioral problems are manifested similarly among Native American adolescents and the majority adolescent population, but prevalence of psychological problems was greater and more severe for Native American youth.
- A national survey of 14,000 Native American youth found that 11.4% experience hopelessness, 6.6% worry about losing their mind, and 18.3% experience constant sadness (University of Minnesota Adolescent Health Program, 1992).
- Indian youths have more serious problems than youth of other ethnic minority groups, including high rates of posttraumatic stress disorder (PTSD), depression, suicide, anxiety, substance abuse, adjustment and behavior disorders, and issues related to cultural identity (U.S. Office of Technology Assessment, 1990).
- Behavioral and emotional problems among American Indian children are worsened by psychosocial problems such as dysfunctional families, alcoholism, abuse, violence, neglect, and loss of cultural and social supports (Nelson, 1989; Dinges & Duong-Tran, 1993).
- Reports from the Navajo Children's Summit (Joe, 1996; Smithson, 1996) indicate that children of the Navajo tribe face greater risks than majority children due to having to synthesize ways of life from two different cultures, while contending with family violence, single parent homes, alcoholism, child sexual abuse, child physical abuse, and poverty.
- Basic research is needed to support the identification, prevention, and treatment of internalizing disorders among American Indian children and adolescents.
- Therefore, this study seeks to determine the frequency of internalizing symptoms and syndromes (as defined from a mainstream, western perspective) reported by parents, teachers and children who reside in various rural areas of the Navajo reservation.

Methods

Sample

- Analyses reported in the present study were based on a sample of 351 Native American families with children in second and fourth grades.
- All subjects were from rural areas of the Navajo reservation.
- These communities were chosen with the assistance of the tribal governments for their representiveness in terms of geography and demographics and their interest and willingness to participate.
- Table 1 and 2 provides selected demographic characteristics of participating children and families.

Instruments

Student's Opinion of Self (SOS) A 109 item self-report inventory for use in screening internalizing symptoms (depression, anxiety & somatic concerns) and adaptive functioning in elementary school children.

Teacher Interview Form (TIF) A 120 item instrument designed to obtain teachers' report of their students' adaptive functioning and problems in a standardized format. The teacher rating form overlaps with items on the children's self-report and parent reports.

Child's Assessment by Parent (CAP) A behavior rating scale which consists of 189 items with specific questions on social-emotional behaviors, home environment and school related activities.

Biodemographic Instrument (BIODEM) A lengthy, structured interview conducted in the Native American language with a primary caretaker of the participating child. The Biodem covered various demographic questions about education, occupation, financial profiles of the family, health and developmental history of the child, family and household composition, family social support and stressors.

Procedures

- Data were collected as part of a larger community-based research project.
- Communities became involved only if they felt that they would be willing and able to actively participate in the research process, and if they were satisfied with the project's potential to provide returns to the community commensurate with the support provided by the community, and a community advisory board provided input on every aspect of the project.
- Data were collected from children and teachers in the classroom setting, and parents were interviewed at home by trained, indigenous interviewers.
- For each informant group, those children whose scores were less than one standard deviation above the sample mean were categorized as the "non-clinical" group. "Symptomatic" clinical status was defined as those children who scored between one and two standard deviations above the group mean. The "clinically significant" status included those children whose scores were at least two standard deviations above the group mean.

Results

Prevalence Rates for Depression, Anxiety, and Somatic Concerns across reporting sources, age and gender

- **As presented in Table 3:**
  - 82-87% of children fell in the non clinical range across reporting sources.
  - Children who were considered "symptomatic" for depression ranged from 6.5% for teacher to a high of 15.2% for self report.
  - Children with **clinically significant symptoms of depression** were identified by 5.0% of parents and 6.1% of teachers; 2.6% of children self-reported clinically significant problems with depression.
- **As shown in Table 4:**
  - 81% to 83% of children fell in the non-clinical range on anxiety across reporting sources.
  - The number of "Symptomatic" children were similarly high across reporting sources ranging from 12.9% as reported by teachers to 13.7 % for self report.
  - Children with **clinically significant symptoms of anxiety** were identifed by 2.9% of parents and 5.4% of teachers; 3.3% of children self-reported clinically significant problems with anxiety.
- **As shown in Table 5:**
  - 82% to 88 % of students fell in the non-clinical range across reporting sources for somatization. The number of children who were considered "symptomatic" ranged from 8.3% for parent to a high of 15.2% based on self -report.
  - 2.6% of children self-reported **clinically significant problems with somatic concerns**. Parents reported 4.2% of children with somatization, while teachers reported 3.4% children with somatization.
- **Depression symptoms across gender and grade are shown in Table 6:**
  - Parents and children reported some differences for depressive symptoms across gender and age groups.
  - In particular, second-grade girls self-reported more depressive symptoms than second-grade boys, while fourth-grade boys reported more depressive symptoms than fourth-grade girls.
  - Parents reported slightly higher depressive symptoms for fourth-grade boys than fourth-grade girls.
  - On the other hand, teachers reported no gender differences for either second-graders or fourth-graders.
- **Anxiety symptoms across gender and grade are shown in Table 7:**
  - With respect to gender and grade differences in children's anxious symptoms, parents reported higher anxiety anxiety symptoms for second-grade girls than second-grade boys. There were no gender differences between fourth-grade girls and boys per parent report.
  - With regard to self-reported anxiety, second-grade girls had elevated anxiety symptoms than

second-grade boys. There were no differences found between fourth-graders.
- No differences were found for grade or gender based on teacher reports of anxiety.

❖ **Somatization symptoms across gender and grade are shown in Table 8:**
- Parents reported fourth-grade boys complained of somatic concerns more often than fourth-grade girls, as indicated by a small effect size.
- Furthermore, teachers seemed to agree with parents that fourth-grade boys complained of somatic concerns more than the average fourth-grade girls.
- Based on self-report, girls in the second grade reported slightly more somatization than the average second-grade boys, as indicated by a small effect size.

Discussion

Prevalence Findings

❖ The results from this study provide preliminary information regarding the extent of emotional disorders among Native American children, and advances the limited knowledge base targeting internalizing symptoms for Native American children.

❖ In the present sample of Navajo children, 12.6% to 17.8% had some degree of depressive symptoms, based on self-report, parents' and teachers' reports. This is quite high when compared to the prevalence estimates for the general population but seems comparable to the rates of symptoms found among Native American youth in a national survey. Prevalence estimates from this study seem to suggest that approximately one in twenty children are at the high end of the distribution of children with depressive symptoms. These children are likely displaying significant clinical signs of depression and evidencing symptoms that would be consistent with a depressive disorder.

❖ Previous literature indicates that anxiety disorders are common on the Navajo reservation, although specific rates are unknown (Nagel, 1994).The high rate of anxiety symptoms to emerge from the present findings suggests a need to train individuals who work with children and families in order to identify causes and symptoms of anxiety, and to possibly curtail anxiety symptoms/disorders, particularly since childhood anxiety may be predictive of adult psychopathology.

❖ The findings from this study tentatively agree with previous literature indicating that girls generally report anxiety symptoms more often than boys. However, present findings add a qualification to the previous findings, that is, girls do have more symptoms at a younger age, but by fourth grade these differences may disappear. Future research investigating anxiety should carefully consider age differences among elementary school children.

❖ Responses on the somatic concerns subscale may have been influenced by cultural factors. According to traditional Navajo conception of health and illness, physical symptoms can be caused by many factors in addition to medical causes. This is in contrast to a Western medical model of illness upon which the definition of somatization was based. Therefore, Navajo parents and teachers may have responded to somatization items on some other basis than was intended by the instrument developers for instance, based on a belief that symptoms were caused by violation of a taboo. It is unknown what effect this may have had on subscale scores. Traditional beliefs may constitute a strength in terms of recognizing and responding to psychosomatic symptoms, since these beliefs already acknowledge the possibility of a mental or emotional cause for physical symptoms. It may be helpful for teachers and parents to learn more about how children's physical symptoms may result from depression or anxiety, as well as from physical conditions or injuries causing similar symptoms.

❖ These findings regarding symptoms defined from perspective of mainstream western culture may have been influenced by language, culturally-based perceptions of symptoms and disorders, and other cultural characteristics. Further research is needed to understand the interaction of these factors, and to advance knowledge and abilities to detect internalizing symptoms in the cultural context of Native American children.

Limitations and Recommendations

- The present findings are not likely to overestimate the extent of internalizing problems among Navajo children, and may actually underestimate current prevalence.
- Prevalence estimates are based on this particular sample. Further research is needed to increase confidence in the estimates of internalizing symptoms. Sample selection constitutes a limitation on prevalence estimates, since the current sample was not selected to be representative of all Navajo children and adolescents.
- An additional limitation was that the modified instruments utilized in this study are neither published nor widely available for replication.
- Other possible limitations may have arisen because parents were interviewed in both English and Navajo languages, and one might speculate that linguistic and/or cultural factors could have affected the way in which Navajo parents endorsed the items. Communication across languages on matters of psychiatric concern (e.g., from Navajo to English or from English to Navajo) can raise many difficulties in interpretation, even with the use of a translator (Adair, Deuschle, & Barnett, 1988).
- This was a descriptive study providing broad exploratory information, but there remains a need for more focused research identifying multivariate relationships among relevant variables.
- These findings need to be replicated with other samples of Native American children, to establish stability of these results and broaden generalizability to children from other tribal groups.
- Although this study included data from multiple informants, it relied on the single assessment method of behavior rating scales. It would be ideal to gather more information such as clinical/diagnostic interviews and behavioral observations, in addition to standardized behavior rating scales.

Summary and General Recommendations

- Findings with respect to elementary school-aged children found relatively high rates of depression, anxiety, and somatization symptoms and, potentially, disorders. These findings are a cause for concern for parents and agencies responsible for children's mental health.
- One recommendation based on these findings might be to initiate an awareness program on internalizing symptoms/disorders in Native American communities. Information should be comprehensive and broad enough to help people begin to understand internalizing symptoms and its consequences.
- Although most of the preceding discussion has focused on internalizing problems, a positive finding is that the large majority of children did not display internalizing problems. Children were likely to have positive family relationships, particularly supportive relationships with siblings. They are also likely to be seen by themselves and others as showing a high degree of community mindedness. This culturally-based measure indicates that children are competent at the group or community level, that they are generous, sharing, helpful, and responsive with family, friends, and other members of their community.

Table 1

Characteristics of Interviewees Participating in the Study.

Interviewees Characteristics	N	Mean (SD)	Median	Mode	Range
Parent average age (yrs.)	343	35.8 (8.24)	34	34	22-80
Parent average years of education (yrs.)	346	11.2 (4.18)	12	12	0-22
Child's average age (months)	351	109.5 (11.86)	107	102	87-153

Table 2

Summary of Demographic Variables.

Demographic Variables	Percent by Respondents
Children Respondents (N=351)	
Male child respondents	48%
Female child respondents	52%
2nd Grade Participants	79%
4th grade Participants	21%
Adult Respondents: Family and Caregivers variables (N =343)	
Two parent households	69%
One parent households	31%
Biological mothers	71%
Biological fathers	8%
Other relatives-grandmothers, siblings, aunts, step-parents	21%
Adults Respondents: Employment status	
Respondents: unemployed	10%
Respondents: Homemakers	33%
Respondents: Wage Employment	57%

Table 3

Clinical Status of Children Based on Depression Subscale Mean Raw Scores

Clinical status	Sample size	Mean score (SD)	Range of scores	Percentage of children
Self-reported depression	270	18.43 (3.43)		
Nonclinical			<21	82.2
Symptomatic			21-25	15.2
Clinically Significant			25-33	2.6
Parent reported depression	338	20.49 (6.51)		
Nonclinical			<20	82.2
Symptomatic			20-27	12.7
Clinically Significant			27-52	5.0
Teacher reported depression	293	17.01 (5.02)		
Nonclinical			<22	87.4
Symptomatic			22-27	6.5
Clinically Significant			27-52	6.1

Table 4

Clinical Status of Children Based on Anxiety Subscale Mean Raw Scores

Clinical status	Sample size	Mean score (SD)	Range of scores	Percentage of children
Self-reported anxiety	270	19.30 (3.66)		
Nonclinical			<22	83.0
Symptomatic			22-26	13.7
Clinically significant			26-33	3.3
Parent-reported anxiety	342	23.65 (6.42)		
Nonclinical			<30	83.6
Symptomatic			30-36	13.5
Clinically significant			36-48	2.9
Teacher-reported anxiety	294	19.62 (6.17)		
Nonclinical			<25	81.6
Symptomatic			25-31	12.9
Clinically significant			31-52	5.4

Table 5 - Clinical Status of Children Based on Somatic Concerns Subscale Raw Scores

Clinical status	Sample size	Mean score (SD)	Range of scores	Percentage of children
Self-reported somatic concerns	271	9.03 (2.00)		
Nonclinical			<11	82.2
Symptomatic			11-13	15.2
Clinical somatic concerns			13-15	2.6
Parent reported somatic concerns	337	1.40 (.81)		
Nonclinical			Never	87.5
Symptomatic			Sometimes	8.3
Clinical somatic concerns			Often	4.2
Teacher reported somatic concerns	294	1.20 (.40)		
Nonclinical			Never	85.4
Symptomatic			Sometimes	11.2
Clinical somatic concerns			Often	3.4

Table 6 - Descriptive Statistics for Depression Raw Subscale Scores Across Grade and Gender.

	N	Mean	Standard deviation	SMD
Self-report depression				
Second-grade male	96	17.81	3.52	
Second-grade female	105	19.33	3.37	
Second-grade total	201	18.60	3.52	-.43
Fourth-grade male	35	18.57	3.49	
Fourth-grade female	34	17.29	2.61	
Fourth-grade total	69	17.94	3.13	.42
Parent-reported depression				
Second-grade male	123	20.40	6.36	
Second-grade female	141	20.97	6.81	
Second-grade total	264	20.70	6.60	-.08
Fourth-grade male	39	20.33	7.12	
Fourth-grade female	35	19.05	4.94	
Fourth-grade total	74	19.72	6.18	.21
Teacher-reported depression				
Second-grade male	108	16.68	5.03	
Second-grade female	115	16.23	4.49	
Second-grade total	223	16.45	4.75	.09
Fourth-grade male	37	19.22	5.68	
Fourth-grade female	33	18.39	5.21	
Fourth-grade total	70	18.83	5.44	.15

Table 7 - Descriptive Statistics for Anxiety Raw Subscale Scores Across Grade and Gender.

	N	Mean	Standard deviation	SMD
Self-report anxiety				
second grade male	96	18.42	3.59	
second grade female	105	19.87	3.74	
second grade total	201	19.81	3.73	-.40
fourth grade male	35	19.74	3.42	
fourth grade female	34	19.59	3.49	
fourth grade total	69	19.67	3.43	.04
Parent reported anxiety				
second grade male	126	22.77	6.10	
second grade female	142	24.68	6.50	
second grade total	268	23.78	6.37	-.31
fourth grade male	39	23.11	6.86	
fourth grade female	35	23.25	6.41	
fourth grade total	74	23.18	6.61	-.02
Teacher reported anxiety				
second grade male	109	18.72	5.31	
second grade female	115	18.70	5.95	
second grade total	224	18.71	5.63	.00
fourth grade male	37	22.16	7.10	
fourth grade female	33	22.91	6.84	
fourth grade total	70	22.51	6.94	-.11

Table 8

Descriptive Statistics for Somatic Concern Raw Subscale Scores Across Grade and Gender.

	N	Mean	Standard deviation	SMD
Self-report somatic concerns				
second grade male	97	8.82	1.98	
second grade female	105	9.21	1.88	
second grade total	202	9.02	1.94	-.20
fourth grade male	35	9.06	1.95	
fourth grade female	34	9.03	2.44	
fourth grade total	69	9.04	2.19	.01
Parent reported somatic concerns				
second grade male	123	1.28	.67	
second grade female	141	1.43	.85	
second grade total	264	1.36	.77	-.20
fourth grade male	39	1.69	.95	
fourth grade female	34	1.38	.89	
fourth grade total	73	1.55	.93	.34
Teacher reported somatic concerns				
second grade male	109	1.17	.57	
second grade female	115	1.15	.40	
second grade total	224	1.16	.49	.04
fourth grade male	37	1.43	.80	
fourth grade female	33	1.21	.48	
fourth grade total	70	1.33	.68	.34

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